## AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs [0018] and [0019] with the following replacement paragraphs:

[0018] FIG. 1 is a perspective view of ~~one embodiment of the present invention illustrating an exemplary replacement device coupled to the distal end of a femur~~; a model femur showing the patellar side with its trochlear groove, and the replacement device adapted to couple to the femur;

[0019] FIG. 2 is a perspective view of ~~a model femur showing the patellar side with its trochlear groove, and the replacement device adapted to couple to the femur;~~ one embodiment of the present invention illustrating an exemplary replacement device coupled to the distal end of a femur;

Please replace paragraphs [0031] with the following replacement paragraph:

[0031] As illustrated by way of example in FIGS. 2 and 9, one embodiment of the present invention includes a custom replacement device 4 adapted to associate with the distal end of a patient's femur 2. ~~FIG. 1~~ FIG. 2 shows a model made of the patient's femur in FIG. 9. The model 200 is substantially similar to the patient's femur 2 and is used to make the custom replacement device 4 (as discussed below). The surface near the distal end of the femur 2 defines a patellar face 5, and along the patellar face is a trochlear groove 3 of the femur. FIGS. 7 and 8 show exemplary views of a normal, intact knee joint. Referring to FIG. 8, on a healthy knee, the trochlear groove would be covered with about 5 mm of articular cartilage 100. However, if the articular cartilage wears down for any reason, the cushion and sliding surface that the cartilage provides is lost, resulting in pain, and therefore may need to be replaced with the custom replacement device 4.

Please replace paragraphs [0036] with the following replacement paragraphs:

[0036] As further illustrated in FIGS. 2 and 3, the front surface 7 is generally concave, which is formed by the inner and outer lateral (side) lip regions being raised to contour around the third and fourth boundary conditions 12 and 14, respectively. Accordingly, as illustrated by way of example in FIG. 3, the longitudinal path of the resulting front surface substantially replicates the actual trochlear groove-tracking pattern for a healthy knee generally in two ways. The first way is to create a mold that substantially replicates the distal end of a patient's femur (as discussed below), and ~~bases~~ based on the geometry of the replicated mold, the patient's trochlear groove tracking pattern can be determined off of the mold. As illustrated by way of example in FIG. 3, the second way is to align the tracking pattern (axis t-t) along the front surface area 7 so that it is approximately perpendicular to the ends of the condyles 104 & 106 of the femur 2, i.e., and aligned with the center of the femoral head (axis f-f); as most patients have a tracking pattern that is generally perpendicular to the ends of the condyles. Thus, the first method can be used to check the alignment of tracking pattern calculated by the second method, and vice versa. Alternatively, the tracking pattern produced by both methods can be combined to produce an average tracking pattern of both methods. Either way, the tracking pattern produced by both methods will substantially replicate the correct trochlear groove-tracking pattern. Without such customization of the replacement device, there are too many variations amongst patients' knees such that the original kinematics for a patient could not be reproduced. In addition, standard devices require the removal of large amounts of bone in order to make them fit onto the femur. Still further, other known or new methods of tracking the patient's trochlear groove of the femur may be used.

Please replace paragraphs [0042] with the following replacement paragraph:

[0042] To surgically implant the replacement device to the patellar face 5 of the femur 2, a surgeon may first need to remove some or all remaining diseased or damaged ~~articulatar~~ articular cartilage 102 on the patellar surface 5 of the femur (FIG. 8). The

surgeon may then scrape away the articulate cartilage until a substantial bony surface 37 of the patellar face shows. FIG. 8 shows a view of a patient's femur prior to preparation by the surgeon for insertion of a replacement device. Thereafter, the marking template 300 is aligned and positioned onto the patellar face to drill the necessary openings for the pins (FIG. 4). Since the first surface area 302 of the marking template matches the contours of the patellar face 5 along with the four the boundary condition 8, 10, 12 and 14, the surgeon is assured that the marking template is aligned and positioned properly. In other words, the custom marking template can be used to guide the surgeon in marking the location of the openings and thereby aid in the formation of the openings at their appropriate location or predetermined positions. Once the marking template is in position, the surgeon can precisely drill the openings, aided by the holes or slots on the marking template, using any drilling method known to one of ordinary skill in the art. FIG. 9 shows a representative femur 2 where the diseased natural cartilage has been removed, thus exposing the bony surface of the patellar face 5 of the femur and the openings 202 into which the pin(s) 19 of the replacement device 4 will insert.